

## AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A compound which binds the G-quadruplex structure of a telomere comprising the following general formula:

nitrogen-containing aromatic ring -  $\text{NR}_3$  -  
distribution agent -  $\text{NR}'_3$  - nonaromatic  
hydrocarbon chain

in which

- 1) the nitrogen-containing aromatic ring represents:
  - a) a quinoline optionally substituted with at least
    - i) a group  $\text{N}(\text{Ra})(\text{Rb})$  in which  $\text{Ra}$  and  $\text{Rb}$ , which are identical or different, represent hydrogen or a C1-C4 alkyl radical or
    - ii) a group  $\text{ORa}$  in which  $\text{Ra}$  is as defined above
  - b) a quinoline possessing a nitrogen atom in quaternary form ~~or~~
  - c) a benzamidine or
  - d) a pyridine,
- 2)  ~~$\text{R}_3$  and  $\text{R}'_3$~~ ,  $\text{R}_3$  and  $\text{R}'_3$ , which are identical or different, represent independently of each other, hydrogen or a C1-C4 alkyl radical,
- 3) the distribution agent represents:
  - a) a triazine group, a triazine group substituted with
    - (i) an alkyl radical having 1 to 4 carbon atoms, (ii) a ~~this~~ thiol radical, (iii) ~~an oxy~~ a hydroxy radical, or
    - (iv) an amino radical, wherein the alkyl, ~~this~~ thiol,

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

~~oxy~~ hydroxy or amino radicals are unsubstituted or substituted with

- i) one or more short-chain alkyl groups containing 1 to 4 carbon atoms or
- ii) a halogen atom or
- b) a carbonyl group or
- c) a group C(=NH)-NH-C(=NH) or
- d) an alkyldiyl group containing 3 to 7 carbon atoms or
- e) a diazine group, a diazine group substituted with (i) an alkyl radical having 1 to 4 carbon atoms, (ii) a ~~this~~ thiol radical, (iii) an ~~oxy~~ a hydroxy radical, or (iv) an amino radical, wherein the alkyl, ~~this~~ thiol, ~~oxy~~ hydroxy or amino radicals are unsubstituted or substituted with

- i) one or more short-chain alkyl groups containing 1 to 4 carbon atoms or
- ii) a halogen atom,

or a salt thereof.

2. (Original) The compound according to claim 1, wherein the distribution agent is a triazine or diazine group.

3. (Canceled)

4. (Original) The compound according to claim 1, wherein the nonaromatic hydrocarbon chain is chosen from among

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER <sup>LLP</sup>

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

- i) alkyl (C1-C4), alkenyl (C2-C4), wherein the alkyl and alkenyl are linear or branched,
- ii) cycloalkyl (C3-C18)
- iii) cycloalkenyl (C3-C18)
- iv) heterocycloalkyl (C3-C18) and
- v) heterocycloalkyl (C3-C18) including the nitrogen atom of the NR'3 group.

5. (Currently Amended) The ~~compounds~~ compound according to claim 4, wherein the nonaromatic hydrocarbon chain is unsubstituted or substituted with one or more atoms or radicals chosen from among halogen atoms, hydroxyl, aryl, heteroaryl, alkyloxy, aryloxy, ~~this~~ thiol, alkylthio, arylthio, amino, alkylamino, arylamino, dialkylamino, diarylamino, amidino, guanidino, alkylcarbonylamino, arylcarbonylamino, carboxyl, alkylloxycarbonyl, aryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, dialkylaminocarbonyl, alkylcarbonyl arylcarbonyl, cyano, trifluoromethyl, and combinations thereof.

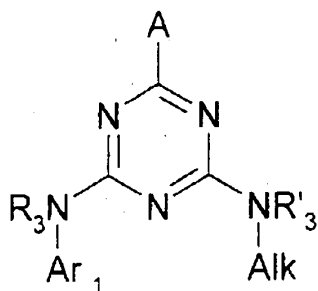
6. (Currently Amended) The ~~compounds~~ compound according to claim 5, wherein the alkyl chains comprise substituents having a hydrocarbon chain containing 1 to 4 carbon atoms, and the aryl groups comprise substituents having a hydrocarbon chain containing 5 to 18 carbon atoms.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER <sup>LLP</sup>

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

7. (Currently Amended) The ~~compounds~~ compound according to claim 4, wherein the alkyl chains contain 2 to 3 carbon atoms, and the heterocycloalkyl or cycloalkyl chains contain 5 to 7 carbon atoms.

8. (Currently Amended) The ~~compounds~~ compound according to claim 1, comprising formula (I) below:



in which:

1) A represents:

- a) an amino group of formula  $NR_1R_2$  in which  $R_1$  and  $R_2$ , which are identical or different, represent hydrogen or a straight or branched alkyl group containing 1 to 4 carbon atoms or
- b) a group  $OR_1$  or  $SR_1$  in which  $R_1$  has the same meaning as above or
- c) an alkyl group containing 1 to 4 carbon atoms or a trifluoromethyl group or
- d) a hydrogen atom or
- e) a halogen atom chosen from fluorine, chlorine, bromine and iodine,

2) ~~R<sub>3</sub> and R'<sub>3</sub>~~, R<sub>3</sub> and R'<sub>3</sub>, which are identical or different, represent independently of each other hydrogen or a C1-C4 alkyl group,

3) Ar<sub>1</sub> represents a nitrogen-containing aromatic ring representing:

- a) a quinoline, either unsubstituted or substituted with at least
  - i) a group N(Ra)(Rb) in which Ra and Rb, which are identical or different, represent hydrogen or a C1-C4 alkyl radical or
  - ii) a group ORa in which Ra is as defined above
- b) a quinoline possessing a nitrogen atom in quaternary form or
- c) a benzamidine or
- d) a pyridine attached at the 4-position or fused with an aryl or heteroaryl group
- e) a pyridine attached at the 4-position or fused with an aryl or heteroaryl group substituted with a C1-C4 alkyl group,

4) Alk ~~alk~~ represents a nonaromatic unsubstituted or substituted hydrocarbon chain chosen from among alkyl (C1-C4), alkenyl (C2-C4), wherein the alkyl and alkenyl chain are linear or branched, cycloalkyl (C3-C18), cycloalkenyl (C3-C18) heterocycloalkyl (C3-C18), and

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

heterocycloalkyl (C3-C18) including the nitrogen atom of the NR<sup>3</sup> group, or a salt thereof.

9. (Currently Amended) ~~The compounds~~ The compound according to claim 8, wherein the nonaromatic hydrocarbon chain is unsubstituted or substituted with one or more atoms or radicals chosen from among halogen atoms, hydroxyl, aryl, heteroaryl, alkyloxy, aryloxy, ~~this~~ thio, alkylthio, arylthio, amino, alkylamino, arylamino, dialkylamino, diarylamino, amidino, guanidino, alkylcarbonylamino, arylcarbonylamino, carboxyl, alkyloxycarbonyl, aryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, dialkylaminocarbonyl, alkylcarbonyl or arylcarbonyl, cyano, trifluoromethyl, and combinations thereof.

10. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein Ar<sub>1</sub> represents 4-amino- or 4-methylamino- or 4-dimethylamino- quinolyl or quinolinium, wherein the quinolinium nucleus is unsubstituted or substituted with a methyl group.

11. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein group A represents a thiomethyl, amino, alkylamino or dialkylamino, in which the alkyl groups in the radicals possess 1 to 4 carbon atoms.

12. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein A represents a methylthio group.

13. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein Alk alk represents an alkyl containing 2 to 3 linear or branched carbon atoms, wherein the alkyl is substituted with

- i) an amino, alkylamino, arylamino, dialkylamino, diarylamino, or combination thereof
- ii) an alkenyl unit containing 2 to 3 carbon atoms, which is substituted with an amino, alkylamino arylamino, dialkylamino, diarylamino, heterocyclyl containing from 4 to 7 carbon atoms, or a combination thereof.

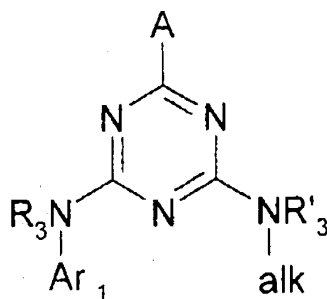
14. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein Alk alk represents a 2-(dialkylamino)ethyl, 3-(dialkylamino)propyl, 2-(N-alkyl-N-arylamino)ethyl, or 3-(N-alkyl-N-arylamino)propyl, in which the alkyl groups contain 1 to 4 carbon atoms and the aryl groups contain 5 to 18 carbon atoms.

15. (Currently Amended) ~~Compounds~~ The compound according to claim 8, wherein Alk alk represents 2-(N-m.tolyl-N-ethylamino)ethyl.

16. Canceled

17. Canceled

18. (Currently Amended) ~~Novel compounds~~ A compound  
corresponding to the following formula (I):



in which:

- 1) A represents
  - a) an amino group of formula NR<sub>1</sub>R<sub>2</sub> in which R<sub>1</sub> and R<sub>2</sub>, which are identical or different, represent hydrogen or a straight or branched alkyl group containing 1 to 4 carbon atoms or
  - b) a group OR<sub>1</sub> or SR<sub>1</sub> in which R<sub>1</sub> has the same meaning as above or
  - c) an alkyl group containing 1 to 4 carbon atoms or a trifluoromethyl group or
  - d) a hydrogen atom or
  - e) a halogen atom chosen from fluorine, chlorine, bromine and iodine,

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com



- 2) ~~R<sub>3</sub> and R'<sub>3</sub>~~, R<sub>3</sub> and R'<sub>3</sub>, which are identical or different, represent independently of each other hydrogen or a C1-C4 alkyl group,
- 3) Ar<sub>1</sub> represents a nitrogen-containing aromatic ring representing:
- a) a quinoline, either unsubstituted or substituted with at least
    - i) a group N(Ra)(Rb) in which Ra and Rb, which are identical or different, represent hydrogen or a C1-C4 alkyl radical or
    - ii) a group ORa in which Ra is as defined above
  - b) a quinoline possessing a nitrogen atom in quaternary form or
  - c) a benzamidine or
  - d) a pyridine attached at the 4-position or fused with an aryl or heteroaryl group or
  - e) a pyridine attached at the 4-position or fused with an aryl or heteroaryl group substituted with a C1-C4 alkyl group,
- 4) alk represents a nonaromatic unsubstituted or substituted hydrocarbon chain chosen from among alkyl (C1-C4), alkenyl (C2-C4), wherein the alkyl and alkenyl chain are linear or branched, cycloalkyl (C3-C18), cycloalkenyl (C3-C18), heterocycloalkyl (C3-C18), and heterocycloalkyl

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

(C3-C18) including the nitrogen atom of the NR<sup>3</sup> group,  
or a salt thereof.

19. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein the nonaromatic hydrocarbon chain is unsubstituted or substituted with one or more atoms or radicals chosen from among halogen atoms, hydroxyl, aryl, heteroaryl, alkyloxy, aryloxy, ~~this~~ thiol, alkylthio, arylthio, amino, alkylamino, arylamino, dialkylamino, diarylamino, amidino, guanidino, alkylcarbonylamino, arylcarbonylamino, carboxyl, alkyloxycarbonyl, aryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, dialkylaminocarbonyl, alkylcarbonyl, arylcarbonyl, cyano, trifluoromethyl, and combinations thereof.

20. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein Ar<sub>1</sub> represents 4-amino- or 4-methylamino- or 4-dimethylamino-quinolyl or quinolinium, wherein the quinolinium nucleus is unsubstituted or substituted with a methyl group.

21. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein group A represents a thiomethyl, amino, alkylamino or dialkylamino, in which the alkyl groups in the radicals possess 1 to 4 carbon atoms.

22. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein R1 and R2 represent hydrogen.

23. (Currently Amended) ~~Compounds~~ The compound according to claim 21, wherein A represents a methylthio group.

24. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein alk represents

i) an alkyl containing 2 to 3 linear or branched carbon atoms which is substituted with an amino, alkylamino, arylamino, dialkylamino, diarylamino, or combination thereof,

ii) an alkenyl unit containing 2 to 3 carbon atoms, which is substituted with an amino, alkylamino, arylamino, dialkylamino, diarylamino, or combination thereof, or

iii) a heterocyclyl containing from 4 to 7 carbon atoms.

25. (Currently Amended) ~~Compounds~~ The compound according to claim 18, wherein alk represents 2-(dialkylamino)ethyl, 3-(dialkylamino)propyl, 2-(N-alkyl-N-arylamino)ethyl or 3-(N-alkyl-N-arylamino)propyl, in which the alkyl groups contain 1 to 4 carbon atoms and the aryl groups contain 5 to 18 carbon atoms.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

26. (Currently Amended) ~~Compounds~~ The compound according to claim 24, characterized in that alk represents a 2-(N-m.tolyl-N-ethylamino)ethyl.

27. (Canceled)

28. (Original) A therapeutic composition comprising a compound according to claim 1 and one or more anticancer compounds.

29. (Original) The composition according to claim 28, wherein the one or more anticancer compounds are chosen from among alkylating agents, platinum derivatives, antibiotic agents, antimicrotubule agents, anthracyclines, group I and II topoisomerases, fluoropyrimidines, cytidine analogs, adenosine analogs, L-asparaginase, hydroxyurea, trans-retinoic acid, suramine, irinotecan, topotecan, dexrazoxane, amifostine, herceptin, estrogenic hormones, and androgenic hormones.

30. (Canceled)

31. (Currently Amended) A method of using the composition of claim 29, wherein the individual compounds are administered in a therapeutically effective amount to a patient simultaneously, separately or sequentially.

32. (Added) A method of inhibiting telomerase activity, comprising administering a therapeutically effective amount of one or more compounds of claim 1 to a patient, wherein the level of telomerase activity in the patient following the administration is reduced relative to the level of telomerase activity existing prior to the administration.

33. (Added) A method of treating a cancer, comprising administering a therapeutically effective amount of one or more compounds of claim 1 to a patient in need of such a treatment, wherein the level of telomerase activity following the administration is reduced relative to the level of telomerase activity existing prior to the administration.

34. (Added) A pharmaceutical composition comprising one or more compounds of claim 1, and a pharmaceutically acceptable carrier.

35. (Added) A therapeutic combination consisting of the administration of one or more compounds according to claim 1 and the administration of radiation.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)